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# (54) SOFTWARE AND FIRMWARE ADAPTATION FOR UNANTICIPATED/CHANGING HARDWARE ENVIRONMENTS

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(57) **ABSTRACT**

A method for producing a fixed-size firmware image for a hardware device, parameterized for a plurality of component environments, includes providing a logical description of aspects of said plurality of component environments; providing a physical description of physical aspects of said plurality of component environments; associating said logical description with said physical description; and providing said firmware image to include a plurality of parameterized functions to support said hardware device in each of said plurality of component environments. The hardware device may be a power supply, bus; fan, disk drives, sensor, or flash part. Actual arguments to said parameterized functions are bound at run time and may be provided as untyped blocks of bits. The firmware image may include an operational block including abstract device driver interfaces for said hardware device; and a description block that includes said logical and physical descriptions.